# Integrated Unit Simulation System (IUSS)

## What It Is:

The IUSS is a constructive force-on-force model for assessing the combat worth of systems and subsystems for both individual and small unit dismounted warfighters in high resolution combat operations. IUSS is PC-based software coded in C++ programming language that gives analysts the primary capability to model lethality and survivability, some capability to model mobility and C4I, and rudimentary capability to model MOUT environments and sustainability. It is acknowledged as the optimal tool for highly detailed research, development, and acquisition (RDA) analyses of individual warrior systems.

## Why It Is Needed:

The IUSS can reduce overall acquisition cycle time and avoid costs through the application of Simulation and Modeling for Acquisition, Requirements and Training (SMART) and Simulation-Based Acquisition (SBA). Additionally, the conscientious use of IUSS can assist Project, Product, and Program Managers in making decisions on candidate systems or subsystem for further development. By analyzing data from simulations run with IUSS, analysts can also recommend changes to tactical doctrine to improve soldiering tasks and techniques.

## How It Works:

Throughout the integrated materiel evaluation process, the combat worth of items and systems must be evaluated through appropriate analyses. In order to do this, combat threats, measures of performance and effectiveness, component system specifications, and scenario vignettes act as inputs to the analyses. Additionally, environmental and psycho-physiological elements on the battlefield can be modeled too, such as heat stress, fatigue, load, hydration, dynamic weather and terrain, and variable lighting conditions. The products, or outputs, from these analyses are combat worth assessments of items and systems, technology down-selection, trade decisions, investment strategies, risk reduction strategies, test and evaluation optimization, and requirements validation. In this way, we can use IUSS to assess the soldiers' battlefield performance and answer questions like, "How does fatigue affect a soldier's split-second ability to identify and acquire an enemy target?" or, "Does increasing a soldier's protection restrict their mobility?"

## Benefits:

**Versatile Tool…**From optimizing body armor configurations, to analyzing different camouflage patterns, to simulating chemical operations, IUSS allows analysts to explore the complex relationships between soldiers, their equipment, and their battlefield environment. Exploring these complex relationships is particularly beneficial where live fire or large-scale testing would be prohibitive. From FY00 to FY04, planned upgrades to IUSS will include new combat scenarios in MOUT environments, situational awareness algorithms, battlefield stressors, human behavior representation, terrain maps, meteorological data, and combat materiel.

## Point of Contact:

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Latest Version

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